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Sheet

Page 1 of 10

**Complete If Known**

Application Number	To be assigned
Filing Date	Herewith
First Named Inventor	Cech, Thomas R.
Group Art Unit	To Be Assigned
Examiner Name	To Be Assigned

Attorney Docket Number 015389-002980US

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
Suy	A	3,817,637		Tanenholz et al.	08-18-74	
	B	3,860,752		Schuure et al.	11-26-74	
	C	3,939,350		Kronick et al.	02-17-79	
	D	3,996,345		Ullman et al.	12-01-79	
	E	4,276,149		Litman et al.	06-23-81	
	F	4,277,437		Maggio	07-07-81	
	G	4,368,241		Tom et al.	12-26-82	
	H	4,683,185		Mullis et al.	07-28-87	
	I	4,683,202		Mullis	07-28-87	
	J	4,818,567		Cabilly et al.	03-28-89	
	K	4,965,188		Mullis et al.	10-23-90	
	L	5,489,508		West et al.	02-08-98	
	M	5,593,618		Villepontreau et al.	12-10-98	
Suy	N	5,747,317		Cao	05-05-98	
	O	5,770,422		Collins	08-23-98	
	P	6,093,809		Cech, et al.	07/25/00	
	Q	6,258,535	B1	Villepontreau et al.	07-10-01	
	R	6,261,556	B1	Weinrich et al.	07-17-01	
	S	6,261,838	B1	Cech et al.	07-17-01	

## FOREIGN PATENT DOCUMENTS

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		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
Suy	T	JP	09154576-A			06-17-97		
	U	PCT	WO 93/23572			11/93		
	V	PCT	WO 95/13382			8/95		
	W	PCT	WO 96/01835			01-25-96		
	X	PCT	WO 96/12811			05-02-96		
	Y	PCT	WO 96/19580			06-27-96		
	Z	PCT	WO 96/40888			12-18-96		
	AA	PCT	WO 98/01542			01-15-98		
	AB	PCT	WO 98/01543			01-15-98		
	AC	PCT	WO 98/07838			03-05-98		
	AD	PCT	WO 98/08838			02-28-98		

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		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (# known)				
See	AE	PCT	WO 98/21343			05-22-98		
	AF	PCT	WO 98/23759			06-98		
	AG	PCT	WO 98/37181			08-27-98		
	AH	PCT	WO 98/45450			10-15-98		
✓	AI	PCT	WO98/59040			12-30-98		
	AJ	PCT	WO98/01860			01-14-99		

**OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
See	AK	1994 Genome Issue of Science (265:1981f)	
	AL	Anderson and Young, "Quantitative Filter Hybridization" in <i>Nucleic Acid Hybridization</i> pp73-111 (1985)	
	AM	Ausubel et al., <i>Current Protocols in Molecular Biology</i> , John Wiley & Sons, New York NY (1988)	
	AN	Autexier et al., "Reconstitution of human telomerase activity and identification of a minimal functional region of the human telomerase RNA," (1998) EMBO J, 15:5928	
	AO	Autexier, C. et al, "Telomerase and cancer: revisiting the telomere hypothesis," Trends in Biochemical Sciences, 10 (21): 387-391 (1995).	
	AP	Autexier and Greider, "Functional reconstitution of wild-type and mutant <i>Tetrahymena</i> telomerase," (1994) Genes Develop., 8:563	
	AQ	Avilion, A., "Characterization and expression of human telomerase," Dissertation Abstracts International, 56 (11) 5930-B (1996).	
	AR	Barnaga, M., "The Telomerase Picture Fills In," Science 276:528-529 (1997).	
✓	AS	Berger and Kimmel, <i>Guide to Molecular Cloning Techniques</i> , Meth. Enzymol., vol. 152, Academic Press, San Diego CA (1987)	

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Suzan S

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Sel	AT	Blessmann et al., "Addition of Telomere-Associated HeT DNA Sequences "Heals" Broken Chromosome Ends in Drosophila," Cell 61:663 (1990).
	AU	Bitter et al., "Expression and secretion vectors for yeast," Meth Enzymol., (1987) 153:516
	AV	Blackburn and Chlou, "Non-nucleosomal packaging of a tandemly repeated DNA sequence at termini of extrachromosomal DNA coding for rRNA in Tetrahymena," (1981) Proc. Natl. Acad. Sci., 78:2263
	AW	Blackburn and Gell, "A tandemly repeated sequence at the termini of the extrachromosomal ribosomal RNA genes in Tetrahymena," (1978) J. Mol. Biol., 120:33
	AX	Blackburn, "Telomerases," (1992) Ann. Rev. Biochem., 61:113
	AY	Bodnar et al., "Extension of Life-Span by Introduction of Telomerase into Normal Human Cells," (1998) Science, 278:349
	AZ	Bradford, "A Rapid and Sensitive method for the Quantitation of Microgram Quantities of Protein Utilizing the Principle of Protein-Dye Binding," (1976) Anal. Biochem., 72:248
	BA	Braunstein et al., "Transcriptional silencing in yeast is associated with reduced nucleosome acetylation," (1993) Genes Develop., 7:592
	BB	Calvo et al., "Identification of hnRNP P2 as TLS/FUS using electrospray mass spectrometry," (1995) RNA, 1:724
	BC	Caruthers et al., "New chemical methods for synthesizing polynucleotides," (1980) Nucleic Acids Res. Symp. Ser., 218:223
	BD	Chan and Tye, "Organization of DNA sequences and replication origins at yeast telomeres," (1983) Cell, 33:563
	BE	Colbère-Garapin et al., "A new dominant hybrid selective marker for higher eukaryotic cells," (1981) J. Mol. Biol., 150:1
	BF	Cole et al., "The EBV-hybridoma technique and its application to human lung cancer," Monoclonal Antibodies and Cancer Therapy, Alan R. Liss Inc., New York NY 77-96 (1988)
	BG	Collins et al., "Purification of Tetrahymena telomerase and cloning of genes encoding the two protein components of the enzyme," (1995) Cell, 81:677
✓	BH	Collins, K., "Structure and Function of Telomerase," Curr. Op. Cell. Biol. 8:374-380 (1996).

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<i>Sf</i>	BI	Conrad et al., "RAP1 protein interacts with yeast telomeres in vivo: Overproduction alters telomere structure and decreases chromosome stability," (1990) Cell, 63:739
	BJ	Coombe, <i>Dictionary of Biotechnology</i> , Stockton Press, New York NY (1984)
	BK	Cota et al., "Generation of human monoclonal antibodies reactive with cellular antigens," (1983) Proc. Natl. Acad. Sci., 80:2026
	BL	Counter et al., "The catalytic subunit of yeast telomerase," (1997) Proc. Natl. Acad. Sci., 94:9202
	BM	Creighton, <i>Proteins, Structures and Molecular Principles</i> , WH Freeman and Co, New York NY [1983].
	BN	Dieffenbach and Dveksler, <i>PCR Primer, a Laboratory Manual</i> , Cold Spring Harbor Press, Plainview NY (1995)
	BO	Duplisea et al., "Quantitative analysis of polymerase chain reaction products using biotinylated dUTP incorporation," (1993) Anal. Biochem., 212:229
	BP	Fang et al., "Oxytricha telomere-binding protein: separable DNA-binding and dimerization domains of the $\alpha$ -subunit," Genes Develop. 7:870 (1993) and Gray et al., (1991) Cell 67:607
	BQ	Feng et al., "The RNA Component of Human Telomerase," (1995) Science, 269:1238
	BR	GenBank Accession No. AA281286
	BS	Genbank accession no. AA298878
	BT	Genbank accession no. AA311750
	BU	Gilley et al., "Altering specific telomerase RNA template residues affects active site function," (1995) Genes Develop., 9:2214
	BV	Gottschling and Cech, "Chromatin Structure of the Molecular Ends of Oxytricha Mononuclear DNA: Phased Nucleosomes and a Telomeric Complex," (1984) Cell, 38:501
	BW	Gottschling and Zeldan, "Telomere proteins: specific recognition and protection of the natural termini of Oxytricha macronuclear DNA," (1986) Cell 47:195

Examiner Signature	<i>J. Gao</i>	Date Considered	1/17/05
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<i>Ger</i>	BX	Grant et al., Meth Enzymol., (1987) 183:515-544	
	BY	Greenwood et al., "Phylogenetic relationships within the class oligohymenophorea, phylum ciliphora, inferred from the complete small subunit rRNA gene sequences of <i>Colpidium campylum</i> , <i>Glaucoma chattoni</i> , and <i>Opisthontes henneguyi</i> ," (1991) J. Mol. Evol., 3:163	
	BZ	Greider and Blackburn, "A telomeric sequence in the RNA of Tetrahymena telomerase required for telomere repeat synthesis," (1989) Nature, 337:331	
	CA	Greider and Blackburn, "Identification of a specific telomere terminal transferase activity in Tetrahymena extracts," (1988) Cell, 43:405	
	CB	Greider, "Telomerase is processive," (1991) Mol. Cell. Biol., 11:4572	
	CC	Greider, "Telomere Length Regulation," (1996) Ann. Rev. Biochem., 65:397	
	CD	Hampton et al., Serological Methods a Laboratory Manual, APS Press, St Paul MN (1980)	
	CE	Harrington et al., "A Mammalian Telomerase-Associated Protein," (1997) Science, 275:973	
	CF	Harrington et al., "Human telomerase contains evolutionarily conserved catalytic and structural subunits," (1997) Genes Dev., 11:3109	
	CG	Hartman and Mulligan, "Two dominant-acting selectable markers for gene transfer studies in mammalian cells," (1988) Proc. Natl. Acad. Sci., 85:8047	
	CH	Henderson and Blackburn, "An overhanging 3' terminus is a conserved feature of telomeres," (1989) Mol Cell. Biol., 9:345	
	CI	Hillier, et al., Direct Submission to GenBank, EST Database, Accession No. W70315, Available Oct. 17, 1998.	
	CJ	Horn et al., "Synthesis of oligonucleotides on cellulose. Part II: design and synthetic strategy to the synthesis of 22-oligodeoxynucleotides coding for gastric inhibitory polypeptide (GIP)," (1980) Nucleic Acids Res. Symp. Ser., 225-232	
	CK	Hudson et al., "An STS-based map of the human genome," (1995) Science, 270:1945	
<i>v</i>	CL	Huse et al., "Generation of a large combinatorial library of the immunoglobulin repertoire in phage lambda," (1989) Science, 248:1275	

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*Susan Ger*

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<i>Su</i>	CM	Kilian et al., "Isolation of a candidate human telomerase catalytic subunit gene, which reveals complex splicing patterns in different cell types," (1997) <i>Hum. Mol. Genet.</i> , 6:2011
	CN	Kipling and Cooke, "Hypervariable ultra-long telomeres in mice," (1990) <i>Nature</i> 347:400
	CO	Klobutcher et al., "All gene-sized DNA molecules in four species of hypotrichs have the same terminal sequence and an unusual 3' terminus," (1981) <i>Proc. Natl. Acad. Sci.</i> , 78:3015
	CP	Koehler and Milstein, "Continuous cultures of fused cells secreting antibody of predefined specificity," (1975) <i>Nature</i> 256:485
	CQ	Kosbor et al., "The production of monoclonal antibodies from human lymphocytes," (1983) <i>Immuno Today</i> 4:72
	CR	Lemond and Sproat, (1994)"Isolation and Characterization of Ribonucleoprotein Complexes," pp103-140
	CS	Lemond et al., "Probing the structure and function of U2 snRNP with antisense oligonucleotides made of 2'-OMe RNA," (1988) <i>Cell</i> , 58:383
	CT	Lendvay et al., "Senescence mutants of <i>Saccharomyces cerevisiae</i> with a defect in telomere replication identify three additional EST genes," (1998) <i>Genetics</i> , 144
	CU	Lingner et al., "Purification of telomerase from <i>Euplotes edentulus</i> : requirement of a primer 3' overhang," (1998) <i>Proc. Natl. Acad. Sci.</i> , 93:10712
	CV	Lingner et al., "Reverse transcriptase motifs in the catalytic subunit of telomerase," (1997) <i>Science</i> , 276:561
	CW	Lingner et al., "Telomerase RNAs of different ciliates have a common secondary structure and a permuted template," (1994) <i>Genes Develop.</i> , 8:1984
	CX	Lingner et al., "Telomerase and DNA End Replication: No Longer a Legging Strand Problem?," (1995) <i>Science</i> 269:1533
	CY	Lowy et al., "Isolation of transforming DNA: Cloning the hamster aprt gene," (1980) <i>Cell</i> , 22:817
	CZ	Lundblad, V. et al., "RNA-dependent polymerase motifs in EST1: tentative identification of a protein component of an essential yeast telomerase," <i>Cell</i> , 60 (5):29-30 (1990).
<i>↓</i>	DA	Lustig and Petes, Identification of yeast mutants with altered telomere structure," (1988) <i>Proc. Natl. Acad. Sci.</i> , 85:1398

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Sue	DB	Lustig, A., "The Identification of Telomerase Subunit: Catalysing Telomere Research," Trends Cell Biol. 7:299-302 (1997).	
	DC	Maddox et al., "Elevated serum levels in human pregnancy of a molecule immunochemically similar to eosinophil granule major basic protein," (1983) J. Exp. Med., 158:1211	
	DD	Makarov et al., "Nucleosomal Organization of Telomere-Specific Chromatin in Rat," (1993) Cell, 73:775	
	DE	McEachern and Blackburn, "runaway telomere elongation caused by telomerase RNA gene mutation," (1995) Nature, 376:403	
	DF	Meiby et al., "Quantitative measurement of human cytokine gene expression by polymerase chain reaction," (1993) J. Immunol. Meth., 159:235	
	DG	Merrifield, "Solid phase peptide synthesis. I. The synthesis of a tetrapeptide," (1963) J. Am. Chem. Soc., 85:2149	
	DH	Meyerson et al., "hEST2, the Putative Human Telomerase Catalytic Subunit Gene, Is Up-Regulated in Tumor Cells and during Immortalization," (1997) Cell, 90:785	
	DI	Murray, In McGraw Hill Yearbook of Science and Technology, (1992) McGraw Hill, New York NY, pp 191-196	
	DJ	Nakamura et al., "Telomerase Catalytic Subunit Homologs from Fission Yeast and Human," (1997) Science, 277:955	
	DK	Nakayama et al., "Cloning of a Candidate cDNA Encoding a Proteinaceous Component of Mammalian Telomerase," Mol. Biol. Cell. Abstracts Supp. 7 p. 288a, .scrn. 1664 (1995).	
	DL	Nakayama et al., "TLP1: A Gene Encoding a Protein Component of Mammalian Telomerase Is a Novel Member of WD Repeats Family," (1997) Cell, 88:875	
	DM	Nielsen et al., (1993) "Peptide nucleic acids (PNAs): Potential antisense and anti-gene agents," Anticancer Drug Des., 8:53	
	DN	Oka et al., "Inverted terminal repeat sequence in the macronuclear DNA of <i>Stylonychia pustulata</i> ," (1980) Gene, 10:301	
	DO	Olovnikov, "A theory of marginotomy: The incomplete copying of template margin in enzymic synthesis of polynucleotides and biological significance of the phenomenon," (1973) J. Theor. Biol., 41:181	
	DP	Oriandi et al., "Cloning immunoglobulin variable domains for expression by the polymerase chain reaction," (1988) Proc. Natl. Acad. Sci., 85:3833	

Examiner Signature

Date Considered

1/17/05

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.  
PA 3185178 v1

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Sheet

Page 8 of 10

**Complete If Known**

Application Number	To be assigned
Filing Date	Herewith
First Named Inventor	Cech, Thomas R.
Group Art Unit	To Be Assigned
Examiner Name	To Be Assigned
Attorney Docket Number	015389-002980US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS		
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
SAC	DQ	Prescott, "The DNA of ciliated protozoa," (1994) <i>Microbiol. Rev.</i> , 58:233
	DR	Price, (1983) <i>Blood Rev.</i> , 7:127
	DS	Rhodes et al., "Transformation of malts by electroporation of embryos," (1995) <i>Meth. Mol. Biol.</i> , 65:121
	DT	Roberts et al., "A strategy for a convergent synthesis of N-linked glycopeptides on a solid support," (1995) <i>Science</i> , 269:202
	DU	Romero and Blackburn, "A conserved secondary structure for telomerase RNA," (1991) <i>Cell</i> , 67:343
	DV	Sambrook et al., Molecular Cloning, A Laboratory Manual, Cold Spring Harbor Press, Plainview NY (1989)
	DW	Sendell et al., "Transcription of yeast telomeres alleviates telomere position effect without affecting chromosome stability," (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:12081
	DX	Sanger et al., "DNA sequencing with chain-terminating inhibitors," <i>Proc. Natl. Acad. Sci.</i> , 74:5483 [1977].
	DY	Scharf et al., "Heat stress promoters and transcription factors," (1994) <i>Result Probl. Cell Differ.</i> , 20:125
	DZ	Shampay and Blackburn, "Generation of telomere-length heterogeneity in <i>Saccharomyces cerevisiae</i> ," (1998) <i>Proc. Natl. Acad. Sci.</i> , 95:634
	EA	Sheen and Lewis, "Transposition of the LINE-like retrotransposon TART to <i>Drosophila</i> chromosome termini," (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:12510
	EB	Singer and Gottschling, "TLC1: Template RNA Component of <i>Saccharomyces cerevisiae</i> Telomerase," (1994) <i>Science</i> 268:404
	EC	Singer, M., "Unusual Reverse Transcriptases," <i>J. Biol. Chem.</i> 270(42):24823-24828 (1995).
	ED	Starling et al., "Extensive telomere repeat arrays in mouse are hypervariable," (1990) <i>Nucleic Acids Res.</i> , 18:6881
✓	EE	Swanton et al., "Arrangement of Coding and Non-coding Sequences in the DNA Molecules Coding for rRNAs in <i>Oxytricha</i> sp.," (1980) <i>Chromosoma</i> 77:203

Examiner Signature		Date Considered	1/17/05
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**INFORMATION DISCLOSURE  
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Sheet

Page 9 of 10

**Complete If Known**

Application Number	To be assigned
Filing Date	Herewith
First Named Inventor	Cech, Thomas R.
Group Art Unit	To Be Assigned
Examiner Name	To Be Assigned

Attorney Docket Number 015389-002980US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS		
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
SU	EF	Tommerup et al., "Unusual chromatin in human telomeres," (1994) Mol. Cell. Biol., 14:5777
	EG	Trask, "Fluorescence in situ hybridization: application in cytogenetics and gene mapping," (1991) Trends Genet., 7:149
	EH	Verma et al., "Human Chromosomes: A Manual of Basic Techniques," Pergamon Press, New York NY (1988)
	EI	Watson, "Origin of concatemeric T7 DNA," (1972) Nature New Biol., 239:197
	EJ	Weinrich et al., "Reconstitution of human telomerase with the template RNA component hTR and the catalytic protein subunit hTRT," (1997) Nat. Genet., 17(4):498
	EK	Wellinger et al., "Origin activation and formation of single-strand TG <sub>n</sub> tails occur sequentially in late S phase on a Yeast linear plasmid," (1993) Mol. Cell. Biol., 13:4057
	EL	Wellinger et al., "Saccharomyces Telomeres Acquire Single-Strand TG <sub>n</sub> Tails Late in S Phase," (1993) Cell 72:61
	EM	Whitehead Institute/MIT Center for Genome Research, Genetic Map of the Mouse, Database Release 10, April 28, 1995
	EN	Wigler et al., "Transfer of purified herpes virus thymidine kinase gene to cultured mouse cells," (1977) Cell, 11:223
	EO	Wigler et al., "Transformation of mammalian cells with an amplifiable dominant-acting gene," (1980) Proc. Natl. Acad. Sci., 77:3567
	EP	Winter and Milstein, "Man-made antibodies," (1991) Nature, 349:293
	EQ	Wright et al., "Saccharomyces telomeres assume a non-nucleosomal chromatin structure," (1992) Genes Develop., 6:197
	ER	Yu et al., "In vivo alteration of telomere sequences and senescence caused by mutated Tetrahymena telomerase RNAs," (1990) Nature, 344:128
	ES	Zahler and Prescott, "Telomere terminal transferase activity in the hypotrichous ciliate Oxytricha nova and a model for replication of the ends of linear DNA molecules," (1988) Nucleic Acids Res., 16:8953
✓	ET	Zakian, Telomeres: Beginning to Understand the End." (1998) Science 270:1601

Examiner Signature	<i>J. Cech</i>	Date Considered	1/17/05
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**INFORMATION DISCLOSURE  
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Sheet **Page 10** of **10****Complete If Known**

<b>Application Number</b>	To be assigned
<b>Filing Date</b>	Herewith
<b>First Named Inventor</b>	Cech, Thomas R.
<b>Group Art Unit</b>	To Be Assigned
<b>Examiner Name</b>	To Be Assigned

Attorney Docket Number **015389-002980US****OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
Spc	EU	Zaug et al., "Catalysis of RNA Cleavage by a Ribozyme Derived from the Group I Intron of Anabaena Pre-tRNA <sup>Leu</sup> ."	
↓	EV	Zaug, A. J. et al., "Method for determining RNA 3' ends and application to human telomerase RNA," Nucleic Acids Research, 24 (3): 532-533 (1996).	

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Date Considered **1/17/05**

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

2

**Complete if Known**

Application Number	10/053,758
Filing Date	January 18, 2002
First Named Inventor	Cech, Thomas R.
Art Unit	1646
Examiner Name	Not yet known

Attorney Docket Number 015389-002980US

U.S. PATENT DOCUMENTS+					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1				
	A2				

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)	
	B1				
	B2				

No References cited

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 2

				Complete if Known
Application Number	10/053,758			
Filing Date	January 18, 2002			
First Named Inventor	Cech, Thomas R.			
Art Unit	1646			
Examiner Name	Not yet known			
Attorney Docket Number	015389-002980US			

### NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
Sig	C1	ANDERSON, W. FRENCH "Human Gene Therapy" <i>Nature</i> , April 30, 1998, pp. 25-30, Vol. 392, Supp.	
	C2	CAMPBELL, KEITH & WILMUT, IAN "Totipotency or Multipotentiality of Cultured Cells: Applications and Progress" <i>Theriogenology</i> , January 1997, pp. 63-72, Vol. 47, Issue 1, Elsevier Science Inc.	
	C3	GEARHART, JOHN "New Potential for Human Embryonic Stem Cells" <i>Science</i> , November 6, 1998; pp. 1061-1062, Vol. 282, Issue 5391.	
	C4	HORNSBY, PJ et al. "Adrenocortical Cells Immortalized by Telomerase: Potential Use for Ex Vivo Gene Therapy" <i>Journal of Anti-Aging Medicine</i> , 2000, pp. 411-417, Vol. 3, No. 4.	
	C5	OSTLER ELIZABETH L. et al. "Telomerase and the Cellular Lifespan: Implications for the Aging Process" <i>J. of Pediatric Endocrinology &amp; Metabolism</i> , 2000, pp. 1467-1476, Vol. 13, Supplement 6, Freund Publishing House Ltd. London.	
	C6	THOMSON, JAMES A. et al. "Embryonic Stem Cell Lines Derived from Human Blastocysts" <i>Science</i> , November 6, 1998; pp. 1145-1147, Vol. 282, Issue 5391.	
	C7		

Examiner Signature	<i>J. Cech</i>	Date Considered	<i>1/17/05</i>
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<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 2

**Complete if Known**

Application Number	10/053,758
Filing Date	January 18, 2002
First Named Inventor	Thomas R. Cech
Art Unit	1646
Examiner Name	Not yet known

Attorney Docket Number 015389-002980US

**U.S. PATENT DOCUMENTS+**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code <sup>2</sup> (if known)			
G	A1	US-6,440,735 B1	08-27-2002	Gaeta	
	A2	US-6,444,650 B1	09-03-2003	Cech et al.	
	A3	US-6,517,834 B1	02-11-2003	Weinrich et al.	
	A4	US-6,608,188 B1	08-19-2003	Tsuchiya et al.	
	A5	US-6,627,619 B2	09-30-2003	Cech et al.	
	A6	US 2002-0164786 A1	11-07-2002	Cech et al.	
	A7	US 2002-0187471 A1	12-12-2002	Cech et al.	
	A8	US 2003-0009019 A1	01-09-2003	Cech et al.	
	A9	US 2003-0044953 A1	03-06-2003	Cech et al.	
	A10	US 2003-0059787 A1	03-27-2003	Cech et al.	
	A11	US 2003-0096344 A1	05-22-2003	Cech et al.	
	A12	US 2003-0100093 A1	05-29-2003	Cech et al.	
	A13	U.S. Application No. 09/432,503		Cech et al.	
	A14	U.S. Application No. 09/721,477		Cech et al.	
	A15	U.S. Application No. 09/721,500		Cech et al.	
	A16	U.S. Application No. 90/974,584		Cech et al.	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
G	B1	CA	2271718	A1	05-22-1998			<input type="checkbox"/>
	B2							<input type="checkbox"/>

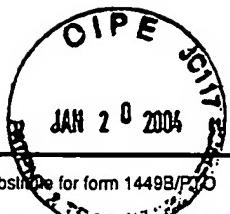
References A13 - A15 have been found through as they are neither published nor issued patents. Reference A16 is denied through because it is neither published nor issued and is not a US application number.

Examiner  
Signature*Thomas R. Cech*Date  
Considered

1/19/05

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Substitute for form 1449B/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				Application Number	10/053,758
				Filing Date	January 18, 2002
				First Named Inventor	Thomas Cech.
				Art Unit	1646
				Examiner Name	Not yet known
Sheet 2		of 2	Attorney Docket Number 015389-002980US		

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		
GJ	C1	ADAMS, MARK et al. "Initial Assessment of Human Gene Diversity and Expression Patterns Based Upon 83 Million Nucleotides of cDNA Sequence" <i>The Genome Directory: Supplement to Nature</i> 28 September 1995, 1995, pp. 3-174, Vol. 377, Issue 6547S.		
	C2			

Examiner Signature		Date Considered	1/19/05
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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 4

Complete if Known	
Application Number	10/053,758
Filing Date	January 18, 2002
First Named Inventor	Cech
Art Unit	1646
Examiner Name	
Attorney Docket Number	015389-002980US

### U.S. PATENT DOCUMENTS+

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code <sup>2</sup> (if known)			
Su	A1	US-5,597,697	01-28-1997	Diamond	
	A2	US-6,917,025	06-29-1999	Collins	
	A3	US-5,919,656	07-08-1999	Harrington, et al.	
	A4	US-6,166,178	12-28-2000	Cech et al.	
	A5	US-6,309,867 B1	10-30-2001	Cech et al.	
	A6	US-6,337,200 B1	01-08-2002	Morin	
	A7	US-6,475,789 B1	11-05-2002	Cech et al.	
	A8	US-6,610,839 B1	08-26-2003	Cech et al.	
	A9	US-6,617,110 B1	09-09-2003	Cech et al.	

### FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup> kind Code <sup>5</sup> (if known)				
Su	B1	GB	2 317 891 A				<input type="checkbox"/>
	B2	PCT	WO 84/03564 A1				<input type="checkbox"/>
	B3	PCT	WO 94/17210 A1				<input type="checkbox"/>
	B4	PCT	WO 98/14592 A2				<input type="checkbox"/>
	B5	PCT	WO 98/14593 A2				<input type="checkbox"/>
	B6	PCT	WO 99/33998 A2				<input type="checkbox"/>
	B7	PCT	WO 99/38984 A2				<input type="checkbox"/>
	B8	PCT	WO 00/46355 A2				<input type="checkbox"/>

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				<b>Complete if Known</b>	
				Application Number	10/053,758
				Filing Date	January 18, 2002
				First Named Inventor	Cech
				Art Unit	1646
				Examiner Name	
Sheet	2	of	4	Attorney Docket Number	015389-002980US

NON PATENT LITERATURE DOCUMENTS					
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T <sup>2</sup>
<i>Eu</i>	C1	ADAMSON, D. et al. "Significant Telomere Shortening in Childhood Leukemia", <i>Cancer Genet. Cytogenet.</i> , 1992; pp. 204-206, Vol. 61			
	C2	CHIU, et al. "Replicative senescence and cell immortality: the role of telomeres and telomerase (44075)", <i>Proc. Soc. Exp. Bio. Med.</i> , 1997, pp. 99-106, Vol. 214.			
	C3	CHONG, L. et al. "A Human Telomeric Protein", <i>Science</i> , Dec. 1995, pp. 1663-1667, Vol. 270.			
	C4	COUNTER, C. et al. "Telomerase activity in human ovarian carcinoma"; <i>Proc. Natl. Acad. Sci USA</i> ; April 1994; Vol. 91; pp. 2900-2904			
	C5	COUNTER, C. et al. "Telomerase Activity in Normal Leukocytes and in Hematologic Malignancies" <i>Blood</i> , May 1, 1995; pp. 2315-2320, Vol. 85, No. 9.			
	C6	COUNTER, C. et al. "Telomere shortening associated with chromosome instability is arrested in immortal cells which express telomerase activity", <i>The EMBO Journal</i> ; 1992, pp. 1921-1929, Vol. 11; No. 5, Oxford University Press.			
	C7	DE LANGE, T. et al. "Structure and Variability of Human Chromosome Ends"; <i>Molecular and Cellular Biology</i> ; February 1990; pp. 518-527, Vol. 10, No. 2.			
	C8	FLAVELL, R. & MATHIAS, R. "Prospects for transforming monocot crop plants", <i>Nature</i> , 12 Jan. 1984, pp. 108-109, Vol. 307.			
	C9	FRESHNEY, <u>Culture of Animal Cells, A Manual Basic Technique</u> , p. 4, Alan R. Liss, Inc. New York, 1983.			
	C10	Genbank Accession No. A46242; September 21, 1993			
	C11	Genbank Accession No. L38903; January 30, 1995			
	C12	Genbank Accession No. Q06163; November 01, 1995			
	C13	Genbank Accession No. S39696; October 07, 1994			
	C14	Genbank Accession No. S53396; May 5, 1995			
	C15	GenBank Accession No. U95964; May 5, 1997			
	C16	GLASER, P. et al. "Bacillus subtilis genome project: cloning and sequencing of the 97 kb region from 325° to 333°" <i>Molecular Microbiology</i> , 1993, pp. 371-384, Vol. 10, No. 2.			
	C17	GOODMAN, R. et al. "Gene Transfer in Crop Improvement", <i>Science</i> , 3 April 1997, pp. 48-54, Vol. 236.			

Examiner Signature	<i>A. Cech</i>	Date Considered	1/17/08
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449B/PTO				<b>Complete If Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				Application Number	10/053,758
Sheet	3	of	4	Filing Date	January 18, 2002
				First Named Inventor	Cech
				Art Unit	1646
				Examiner Name	
				Attorney Docket Number	015389-002980US

<b>NON PATENT LITERATURE DOCUMENTS</b>				
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T <sup>2</sup>
SM	C18	GREIDER, C. "Telomeres, Telomerase and Senescence"; <i>BioEssays</i> ; 1990; pp. 363-369, Vol. 12, No. 8.		
	C19	HARLEY, C. "Telomere loss: Mitotic clock or genetic time bomb?" <i>Mutation Research</i> ; 1991; pp. 271-282, Vol. 256, Elsevier Science Publishers.		
	C20	HARLEY, C. & VILLEPONTEAU, B. "Telomeres and telomerase in aging and cancer" <i>Current Opinion in Genetics and Development</i> ; 1995, pp. 249-255, Vol. 5.		
	C21	HARLEY, C. et al. "Telomeres shorten during ageing of human fibroblasts", <i>Nature</i> , 31 May 1990; pp. 458-460, Vol. 345.		
	C22	HASTIE, N. et al. "Telomere reduction in human colorectal carcinoma and with ageing", <i>Nature</i> , 30 August 1990, pp. 866-868, Vol. 346.		
	C23	HEALY, K. C. "Telomere dynamics and telomerase activation in tumor progression: prospects for prognosis and therapy" <i>Oncol. Res.</i> , 1995, pp. 121-130, Vol. 7		
	C24	HENDERSON, C. Cancer genetics gene regulates telomerase resulting in death of cancer cells; <i>Gene Therapy Weekly</i> ; 11 September 1995.		
	C25	HIYAMA, E. et. al. "Correlating telomerase activity levels with human neuroblastoma outcomes"; <i>Nature Medicine</i> ; 3 March 1995; pp. 249-255, Vol. 1, No. 3.		
	C26	HOLTZMANN, K. et al. "Telomeric Associations and Loss of Telomeric DNA Repeats in Renal Tumors", <i>Genes, Chromosomes &amp; Cancer</i> , 1993, pp. 178-181, Vol. 6.		
	C27	JÄHNE, A. et al. "Genetic Engineering of Cereal Crop Plants: A Review", <i>Euphytica</i> , 1995, pp. 35-44, Vol. 85, Kluwer Academic Publishers, Netherlands.		
	C28	JOHNSON, P. et al., "Expression of Wild-Type p53 Is Not Compatible with Continued Growth of p53-Negative Tumor Cells", <i>Molecular and Cellular Biology</i> , Jan. 1991, p. 1-11, Vol. 11, No. 1.		
	C29	JOLLIFFE, L.K. "Humanized antibodies: enhancing therapeutic utility through antibody engineering", <i>Int. Rev. Immunol.</i> , 1993, pp. 241-250, Vol. 10		
	C30	KIM, N. et al. "Specific Association of Human Telomerase Activity with Immortal Cells and Cancer", <i>Science</i> , 23 December 1994, pp. 2011-2014, Vol. 266.		
	C31	KLINGELHUTZ, A. et al. "Restoration of Telomeres in Human Papillomavirus- Immortalized Human Anogenital Epithelial Cells"; <i>Molecular and Cellular Biology</i> ; Feb. 1994, pp. 961-969, Vol. 14, No. 2.		
	C32	LEWIS, A. & CROWE, J.S. "Generation of humanized monoclonal antibodies by 'best fit' framework selection and recombinant polymerase chain reaction", <i>Year Immunol.</i> , 1993, pp. 110-118, Vol. 7		
	C33	Linking telomerase and tumors; <i>Genesis Report- Dx</i> ; 1995; Vol. 4, No. 6; Publisher Genesis Group Associates.		
	C34	MALICKI, J. et al. "A human HOX4B regulatory element provides head-specific expression in <i>Drosophila</i> embryos", <i>Nature</i> , 23 July 1992, pp. 345-357, Vol. 358.		

Examiner Signature	<i>SM</i>	Date Considered	11/17/05
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PTO/SB/08B (08-03)

Substitute for form 1449B/PTO				Complete If Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application Number	10/053,758
(use as many sheets as necessary)				Filing Date	January 18, 2002
				First Named Inventor	Cech
				Art Unit	1646
				Examiner Name	
Sheet	4	of	4	Attorney Docket Number	015389-002980US

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SJ	C35	NATARAJAN et al. "Major histocompatibility complex determinants select T-cell receptor alpha chain variable region dominance in a peptide-specific response." <i>Proc. Natl. Acad. Sci.</i> , Oct 1992, pp. 8874-8878, Vol. 19.	
	C36	PASZKOWSKI, JERZY et al. "Direct gene transfer to plants." <i>The EMBO Journal</i> , 1984, pp. 2717-2722, Vol. 3, No. 12.	
	C37	POTRYKUS, I. et al. "Direct gene transfer to cells of a graminaceous monocot", <i>Mol. Gen. Genet.</i> , 1985, pp. 183-188, Vol. 199.	
	C38	RAYMOND, E., et al.; Agents that target telomerase and telomeres; <i>Curr. Opin. Biotechnol.</i> ; 1996; 7:583-91	
	C39	RHYU, M.S. "Telomeres, telomerase, and immortality"; <i>J. Natl. Cancer Inst.</i> ; 21 June 1995; pp. 884-894, Vol. 87, No. 12.	
	C40	SCHEINA et al. "Parallel human genome analysis: Microarray-based expression monitoring of 1000 genes", <i>Proc. Natl. Acad. Sci.</i> , Oct. 1998, pp. 10614-10619, Vol. 93, USA.	
	C41	SCHWARTZ, H. et al. "Telomere Reduction in Giant Cell Tumor of Bone and with Aging"; <i>Cancer Genet Cytogenet</i> ; 1993; pp. 132-138, Vol. 71, Elsevier Science Publishing Co., Inc., New York, U.S.A.	
	C42	SMITH, J. & YEH, G. "Telomere Reduction in Endometrial Adenocarcinoma"; <i>Am. J. Obstet. Gynecol.</i> ; Dec. 1992; pp. 1883-1887, Vol. 167, No. 6	
	C43	TAIT, J. et al. "Structure and Polymorphisms of the Human Annexin III (ANX3) Gene"; <i>Genomics</i> , 1993, pp. 79-86, Vol. 18, No. 1	
	C44	WINTER, G. & HARRIS, W. "Humanized Antibodies", <i>Trends Pharmacol. Sci.</i> , May 1993, pp. 139-143, Vol. 14.	
V	C45	WIRTH, URS et al; "Immediate-Early RNA 2.9 and Early RNA 2.6 of Bovine Herpesvirus 1 Are 3' Coterminal and Encode of Putative Zinc Finger Transactivator Protein"; <i>Journal of Virology</i> ; May 1992; pp. 2763-2772, Vol. 66, No. 5.	

Examiner Signature	<i>[Signature]</i>	Date Considered	<i>1/17/05</i>
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